

NOTES

ADDITIONS TO THE VASCULAR FLORA OF YELLOWSTONE NATIONAL PARK, WYOMING.—Continued floristic work based at the Rocky Mountain Herbarium (RM) has resulted in 23 new records for the vascular flora of Yellowstone National Park. Field work in the northern Absaroka Range was done by Hartman and Nelson in 1985; the southwest Absarokas were collected separately and together by Hartman and Snow in 1987 and 1988 (Snow 1989, Floristics of the headwaters region of the Yellowstone River [Wyoming], M.S. thesis, Univ. Wyoming). Both areas had been virtually unbotanized as they are remote, are inaccessible except on foot, and are composed mostly of rugged volcanics reaching over 3200 m in elevation. These records are from a total of 850 collection numbers. Four additional specimens encountered in RM are also cited.

All 23 reports represent range extensions of these taxa in Wyoming (R. D. Dorn 1988, Vascular plants of Wyoming). Yellowstone distribution records are based on D. G. Despain (1975, Field key to the flora of Yellowstone National Park) and G. P. Hallsten, Q. D. Skinner, and A. A. Beetle (1987, Grasses of Wyoming, 3rd ed.). Nomenclature follows Dorn (1988) and the Wyoming Species List (B. E. Nelson and R. L. Hartman unpubl., at RM); voucher specimens are deposited at RM.

Senecio fuscatus Hayek (Asteraceae).—Park Co., above Hoodoo Basin at the head of Lamar River between Lamar Mountain and Hoodoo Peak, alpine meadows and slopes, T55N R108W sect. 35, 3108–3168 m, 22 Jul 1985, *Nelson and Hartman 12761*.

Senecio werneriiifolius (A. Gray) A. Gray var. *alpinus* (A. Gray) Dorn (Asteraceae).—Park Co., on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman 21571*; Republic Pass, ca. 5 km SE of Amphitheater Mountain, dry meadows and slopes above treeline, T57N R108W sect. 5, 3048 m, 14 Jul 1985, *Nelson and Hartman 12455*; near summit of The Thunderer, rocky slope, T57N R109W sect. 20, 3139 m, 13 Jul 1899, *A. Nelson and E. Nelson 5822* (all collections verified by R. D. Dorn, 1988).

Taraxacum eriophorum Rydb. (Asteraceae).—Park Co., on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman 21594* (collection verified by R. Doll, 1986).

Eritrichium nanum (Villars) Schrader ex Gaudin var. *elongatum* (Rydb.) Cronq. (Boraginaceae).—Park Co., Hoodoo Basin trail, ca. 10 air km NW of Stinking-water Peak, grassy alpine slopes, T55N R108W sect. 35, 3048–3168 m, 22 Jul 1985, *Hartman 21335*.

Draba lonchocarpa Rydb. var. *lonchocarpa* (Brassicaceae).—Park Co., 0.8–1.6 air km S of Republic Pass, alpine meadows and rocky slopes, T57N R108W sect. 5, 2804–2987 m, 26 July 1985, *Hartman 21554*.

Arenaria nuttallii Pax ssp. *nuttallii* (Caryophyllaceae).—Park Co., 0.8–1.6 air km S of Republic Pass, alpine meadows and rocky slopes, T57N R108W sect. 5, 2804–2987 m, 26 Jul 1985, *Hartman 21543*; on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N T108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman 21564*; Sylvan Pass to Top Notch Peak, spruce-fir and whitebark pine forests and bald summits and rocky outcrops, T52N R110W sect. 19, 20, 29, 30, 2651–3108 m, 29 Jun 1987, *Hartman and Snow 23505*.

Arenaria rubella (Wahlenb.) Smith (Caryophyllaceae).—Park Co., The Hoodoos, ca.

3 km SSW of Mammoth, limestone rock crevices, T57N R115W sect. 1, 2286 m, 3 Aug 1985, *R. D. Dorn 4284*; immediately SW of Republic Pass, alpine meadows and grassy slopes, T57N R108W sect. 6, 3139 m, 14 Jul 1985, *Hartman and Nelson 20812*; Hoodoo Basin trail, ca. 10 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 35, 3048–3168 m, 22 Jul 1985, *Hartman 21340*; on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman 21577*.

Cerastium beeringianum Cham. & Schldl. var. *capillare* Fern. & Wieg. (Caryophyllaceae).—Park Co., Hoodoo Basin trail, ca. 10 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 35, 3048–3168 m, 22 Jul 1985, *Hartman 21338*.

Silene hitchguirei Bocq. (Caryophyllaceae).—Park Co., Hoodoo Basin trail, ca. 11 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 26, 3017–3078 m, 22 Jul 1985, *Hartman 21355*; on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman 21617*.

Stellaria monantha Hultén (Caryophyllaceae).—Park Co., immediately SW of Republic Pass, alpine meadows and grassy slopes, T57N R108W sect. 6, 3139 m, 14 Jul 1985, *Hartman and Nelson 20827*; Hoodoo Basin trail, ca. 11 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 26, 3017–3078 m, 22 Jul 1985, *Hartman 21370*.

Carex capitata L. (Cyperaceae).—Park Co., above Hoodoo Basin at the head of Lamar River between Lamar Mountain and Hoodoo Peak, drier hummocks below snowfield, T55N R108W sect. 35, 3108–3168 m, 22 Jul 1985, *Nelson and Hartman 12725*.

Carex elynoides Holm (Cyperaceae).—Park Co., Hoodoo Basin trail, ca. 10 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 35, 3048–3168 m, 22 Jul 1985, *Hartman 21339*; on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman 21619*.

Carex haydeniana Olney (Cyperaceae).—Park Co., immediately SW of Republic Pass, alpine meadows and grassy slopes, T57N R108W sect. 6, 3139 m, 14 Jul 1985, *Hartman and Nelson 20813*; Hoodoo Basin trail, ca. 11 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 26, 3017–3078 m, 22 Jul 1985, *Hartman 21347*, *Hartman 21373*; Teton Co., area between Thorofare Creek and Escarpment Creek, vicinity of Thorofare Ranger Station, dry sandbars of creek, T48N R110W sect. 5 and T49N R110W sect. 28, 33, 34, 2453 m, 4 Jul 1988, *Snow 3136*.

Carex obtusata Lilj. (Cyperaceae).—Park Co., immediately SW of Republic Pass, alpine meadows and grassy slopes, T57N R108W sect. 6, 3139 m, 14 Jul 1985, *Hartman and Nelson 20821*; Hoodoo Basin trail, ca. 11 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 26, 3017–3078 m, 22 Jul 1985, *Hartman 21387*; on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman 21614*.

Carex pachystachya Cham. ex Steudel (Cyperaceae).—Yellowstone National Park, wet ground, 26 Aug 1913, *E. Bartholomew 5216*; Park Co., Sedge Creek, T53N R111W sect. 29, 2377 m, 20 Aug 1964, *W. M. Johnson 499*; Republic Pass, ca. 5 km SE of Amphitheater Mountain, dry meadows and slopes above treeline, T57N R108W sect. 5, 6, 3048 m, 14 Jul 1985, *Nelson 12458* (first two collections verified by R. Whitkus, 1989).

Gentianella tenella (Rottb.) Börner (Gentianaceae).—Park Co., on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman 21600*.

Lloydia serotina (L.) Reichenb. (Liliaceae).—Park Co., immediately SW of Republic

- Pass, alpine meadows and grassy slopes, T57N R108W sect. 6, 3139 m, 14 Jul 1985, *Hartman and Nelson 20802*.
- Festuca baffinensis* Polunin (Poaceae).—Park Co., Hoodoo Basin trail, ca. 10 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 35, 3048–3168 m, 22 Jul 1985, *Hartman 21344*.
- Poa secunda* J. S. Presl var. *incurva* (Scribner & T. Williams ex Scribner) Beetle (Poaceae).—Park Co., immediately SW of Republic Pass, alpine meadows and grassy slopes, T57N R108W sect. 6, 3139 m, 14 Jul 1985, *Hartman and Nelson 20830*.
- Potentilla nivea* L. (Rosaceae).—Park Co., Hoodoo Basin trail, ca. 10 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 35, 3048–3168 m, 22 Jul 1985, *Hartman and Nelson 21333*.
- Saxifraga adscendens* L. var. *oregonensis* (Raf.) Breitung (Saxifragaceae).—Park Co., Hoodoo Basin trail, ca. 11 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 26, 3017–3078 m, 22 Jul 1985, *Hartman 21353*; on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rock slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman 21636*.
- Saxifraga flagellaris* Willd. ex Sternb. var. *crandallii* (Gand.) Dorn (Saxifragaceae).—Park Co., Hoodoo Basin trail, ca. 11 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 26, 3017–3078 m, 22 Jul 1985, *Hartman 21376*.
- Saxifraga rivularis* L. ssp. *rivularis* var. *flexuosa* (Sternb.) Engl. & Irmscher (Saxifragaceae).—Park Co., Sylvan Pass to Top Notch Peak, spruce–fir and whitebark pine forests and bald summits and rock outcrops, T52N R110W sect. 19, 20, 29, 30, 2651–3108 m, 29 Jun 1987, *Hartman and Snow 23566*.
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NOTEWORTHY COLLECTIONS

ARIZONA

CATHESTECUM ERECTUM Vasey and Hack (GRAMINEAE).—Pima Co., Ragged Top, ca. 6.5 km N of Silver Bell, South slope of foothills 1 km ENE of Wolcott Peak, T11S R8E sect. 25 NE¼ & sect. 30 NW¼, 760 m, in silty clay soil among high-feldspar quartzite rubble, occasional in some areas, but dense with relatively continuous populations up to a hectare in others, with *Encelia farinosa*, *Carnegiea gigantea*, and *Hibiscus denudatus*, 25 Oct 1989, *J. F. Wiens 89-RT-41* (ARIZ), determined by J. R. Reeder, 17 Nov 1989, *J. F. Wiens 89-RT-44* (ASU, ASDM).

Previous knowledge. Known from NC-Sonora, E to Trans-Pecos Texas, S through much of Mexico, Guatamala, and El Salvador (Swallen, J. R., *The grass genus Cathestecum*. *J. Washington Acad. Sci.*, 1937, 27495–27501). Common on dry, rocky hills and plains in tropical and subtropical communities, and expected for Arizona (Gould, F. W., *Grasses of Southwestern United States*, Univ. Arizona Press, 1951, p. 154). Single Arizona collection by E. Palmer in 1869 (unnumbered at US) is labeled “southern Arizona”. Northernmost Sonoran localities are 25 km S of Pitiquito (1932,